

IN THE CLAIMS:

The paragraphs beginning on page 36, line 11 have been changed as follows:

1. (Currently Amended) A ~~procedure~~ method for ~~the determination of~~ determining deformations of a body by which the effect of forces on the body is analyzed, ~~characterized by the determination of~~ comprising determining the way an equilibrium of forces between internal and external forces for a whole body or a part of it dependent on the material properties and the external boundary conditions comes about, ~~whereby~~ comprising determining the deformations ~~are determined~~ such that all acting forces are represented by the formula

$$\mathbf{f}_{\text{ext}} + \mathbf{m}_{\text{syst}} + \mathbf{m}_A + \mathbf{f}_{\text{s(ext)}} + \mathbf{m}_{\text{s(syst)}} = 0.$$

2. (Currently Amended) ~~Procedure according to claim~~ Method of claim 1, ~~characterized by the condition that~~ comprising determining the material properties ~~are determined~~ as a function of a location Q.

3. (Currently Amended) ~~Procedure according to one of both of the claims~~ Method of claim 1 or 2, ~~characterized by the condition that~~ comprising calculating force vector fields ~~are calculated~~ as a function of externally controlled boundary conditions.

4. (Currently Amended) ~~Procedure according to one or more of the above claims, characterized by the condition that~~ Method of claim 1, wherein the partitioning of work done by normal and shear components of a vector or a vector field is given by the formula

$$\mathbf{r} * \mathbf{f} = \sqrt{|\mathbf{r} \times \mathbf{f}|^2 + |\mathbf{r} \cdot \mathbf{f}|^2} = |\mathbf{r}| |\mathbf{f}| = \text{const} .$$

5. (Currently Amended) ~~Procedure according to one or more of the above claims, characterized by the condition that~~ Method of claim 1, comprising considering a mechanical effect of the radius of a thermodynamic system within a solid ~~is considered.~~

6. (Currently Amended) ~~Procedure according to one or more of the above claims, characterized by the condition that~~ Method of claim 1, comprising considering the radius of a thermodynamic system of fluid ~~can be considered~~ as a lever within a time span which is short relative to the diffusion rate.

7. (Currently Amended) ~~Procedure according to one or more of the above claims, characterized by the condition that~~ Method of claim 1, comprising calculating the normal stretch caused by the shear components $f_{s(\text{ext})}$ ~~und~~ and $m_{s(\text{syst})}$ ~~is essentially calculated~~ according to the formula

$$\int (\mathbf{f}_{\text{dev}} \cdot \mathbf{t}) \mathbf{r} \, d\theta = 2 \int_0^\alpha \sin \theta \cos \theta \sqrt{\cos^2 \theta + \sin^2 \theta} \, d\theta .$$

8. (Currently Amended) ~~Procedure according to one or more of the above claims, characterized by the condition that~~ Method of claim 1, comprising calculating the total displacement is calculated through a the logarithmic work equation, especially the formula

$$\int f dr = -c \int \frac{dr}{r} = -c \ln r .$$

9. (Currently Amended) ~~Procedure according to one or more of the above claims, characterized by the condition that~~ Method of claim 1, comprising calculating the total displacement is calculated by means of a work equation which is derived from an equation of state.

10. (Currently Amended) ~~Computer, characterized by the condition that it comprises~~ comprising at least one means of calculation which uses a method for the determination of deformations of a body, whereby it is examined which examines how the action of forces deforms the body such that at least in one surface area of the body it is determined whether an equilibrium between internal and external forces exists, wherein that the calculation means of calculation can check equilibrium conditions, and that wherein the calculation means of calculation does conduct conducts calculations according to claims the method of claim 1 to 9 in case wherein the state of equilibrium exists.